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ABSTRACT

Eighty-one randomly selected cotton producers in Lauderdale County were interviewed for the purposes of: (1) characterizing those in different cotton yield groups, (2) determining which practices were being used by those in different yield groups, and (3) identifying some of the factors influencing the farmers to use or not to use the 12 practices studied. When highest and lowest yield groups were compared, it was found that the latter had: (1) a higher educational level, (2) a larger average size of farm, (3) more average acres of cropland, (4) a larger cotton allotment, (5) planted a larger acreage of cotton, and (6) harvested more average acres of cotton mechanically. With regard to adoption of 12 recommended cotton production practices studied, farmers in the highest yield group had the highest total average practice diffusion rating. Some other factors influencing cotton practice adoption included: (1) the net returns received per acre, (2) the adequacy of machinery and equipment, (3) the amount of technical knowledge of the operator, (4) the relative cost of the practices and benefits received, and (5) the seriousness of land preparation, planting and harvesting problems peculiar to cotton. (Author/CK)

RESEARCH SUMMA

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A Research Summary of a Graduate Study

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MANAGEMENT PRACTICES OF COTTON PRODUCERS IN LAUDERDALE COUNTY, TENNESSEE

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and

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AGRICULTURAL EXTENSION EDUCATION

AGRICULTURAL EXTENSION SERVICE

THE UNIVERSITY OF TENNESSEE

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MANAGEMENT PRACTICES OF COTTON PRODUCERS IN

LAUDERDALE COUNTY, TENNESSEE

by

Charles T. Peal

June 1968

ABSTRACT

Eighty-one randomly selected cotton producers in Lauderdale County were interviewed in 1966 for the purposes of: (1) characterizing those in different cotton yield groups; (2) determining which practices were being used by those in different yield groups, and (3) identifying some of the factors influencing the farmers to use or not to use the 12 practices studied. Cotton producers were divided into four yield categories based on pounds of lint cotton produced per acre in 1965, and main comparisons were made between highest and lowest groups.

Findings disclosed that cotton producers in the county in 1965 had an average farm size of 78 acres and had an average of 46 acres of cropland. Most producers were full-time farmers with cotton as their major source of income. They averaged about 52 years of age and less than a ninth grade education.

When highest and lowest yield groups were compared it was noted that the latter had: (1) a higher average educational level (9.5 vs. 8.4 grades); (2) a larger average size of farm (79 vs. 67 acres); (3) more average acres

of cropland (61 vs. 39 acres); (4) a larger cotton allotment (20.1 vs. 9.7 acres); (5) planted a larger acreage of cotton (27.0 vs. 11.4), and (6) harvested more average acres of cotton mechanically (15.1 vs. 6.3 acres).

With regard to adoption of 12 recommended cotton production practices studied, farmers in the highest yield group had the highest total average practice diffusion rating. There also appeared to be a positive relation between yield and management levels since higher production groups tended to have higher total average practice diffusion ratings than lower yield groups.

Some other factors influencing cotton practice adoption included: (1) the net returns received per acre; (2) the adequacy of machinery and equipment; (3) the amount of technical knowledge of the operator; (4) the relative cost of the practices and benefits received, and (5) the seriousness of land preparation, planting and harvesting problems peculiar to cotton.

With regard to sources of cotton production and marketing advice reported by crop producers, they included neighbors or friends, dealers or salesmen, and Extension workers in that order. Additional sources of information most frequently mentioned were farm magazines, television, radio and weekly newspapers.

Suggestions were made for use of the findings.

RESEARCH SUMMARY*

I. INTRODUCTION

Approximately 60 percent of Lauderdale County's total farm income was derived from the sale of cotton in 1965. Gross cotton sales totaled about $8,000,000. Lauderdale County's three-year average yield per acre (1963-1965) was 626 pounds of lint. This was an average of 41 pounds more per acre than the state average for the same period. Nevertheless, study of Lauderdale County cotton yield data showed wide variations in per acre cotton yields, ranging from a low of 450 pounds to a high of 1300 pounds of lint, and many producers were at the low end of the scale.

Since information was not available concerning current grower practices, Extension personnel had no definite way of knowing which practices needed emphasis if cotton producers were to be assisted in their efforts to grow more pounds of lint for higher net returns per acre.

Purpose

The general purpose of this investigation was to establish a benchmark (based on a survey of the growers and their practices) that could be used as a basis for formulating a five-year plan of work and for planning further, more detailed research. Specific objectives were: (1) to characterize growers in different yield groups; (2) to find which practices were being used, and (3) to study factors influencing practice adoption.

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Research Methodology

A special interview schedule was developed and used to collect data concerning the characteristics of cotton producers, production practices followed and factors influencing them to adopt recommended practices.

A random sample of 81 from the 1800 cotton producers in Lauderdale County was selected and interviewed for the study. Growers were divided into four main yield groups, namely: (1) considerably below average; (2) below average; (3) above average, and (4) considerably above average. Almost equal numbers of growers were in each of the four yield categories.

II., MAJOR FINDINGS

Findings Related to Characteristics of Cotton Producers

With regard to findings related to the objective of characterizing cotton producers in the various yield groups considered in this study, a number of summary statements may be made.

Survey data comparing educational levels indicated that the average grade level of those in the highest yield group was 8.4 years compared to 9.5 years for the lowest yield group.

Seventy-five percent of the farmers interviewed were 45 years of age or over. The average age was 51.5 with both highest and lowest yield groups being slightly younger, 50.5 and 50.6, respectively. Seventy percent of the 81 cotton producers surveyed were full-time farmers and 28 percent were part-time farmers; while 65 percent of the 81 cotton producers depended upon cotton as their major source of income.

Cotton was grown by the owner on 51 percent of all farms surveyed, worked on shares on 44 percent, and cash rented on the remaining 5 percent.

Eighty-four percent of the farmers in the highest yield group planted less than 15 acres of cotton in 1965; whereas only 49 percent in the lowest yield group planted this small an amount.

Seventy-three percent of the cotton producers interviewed reported using a mechanical harvester on one or more acres for an average of 12.6 acres. One hundred percent of the cotton was harvested mechanically by 33 percent of all producers, by 37 percent of those in the highest yield group, and by 33 percent of those in the lowest yield group. Of those who did no mechanical harvesting at all, 42 percent were in the highest and 17 percent were in the lowest yield groups.

Findings Related to Cotton Production Practices

The farmers in the highest yield group had a higher average practice diffusion rating (4.12) than that recorded for the lowest yield group (3.97). This indicates that the former were operating at a higher management level than the latter since the five-point scale ran from zero, "unaware" of recommended management practices, to five, "using" all practices.

More than two-thirds (68 percent) of the cotton producers interviewed, on the average, were in the "using" stage with regard to each of the 12 recommended cotton production practices. Of those in the highest yield group, 71 percent, on the average, were "using" each practice; while 64 percent of those in the lowest yield group were doing so.

Forty-one percent of the farmers interviewed reported following soil test recommendations in cotton fertilization, a larger percent (47) of the highest yield group than of the lowest yield group (39 percent) using the practice.

Fertilizer usage data showed that the highest yield group used an average of 450.3 total pounds of fertilizer per acre and the lowest yield group 391.4 pounds. More than one-half (52 percent) of those in the highest yield group used 80 or more pounds of nitrogen per acre as contrasted to only 35 percent of those in the lowest yield group using that much.

An average of 47 pounds of phosphate was used by the cotton producers. Little difference was noted between highest and lowest yield groups.

The average total number of pounds of potash used by the highest and lowest yield groups were 50 and 44, respectively.

Seventy-seven percent of the cotton producers interviewed were using pre-emergent herbicides. When the highest and lowest production groups were compared, 79 percent of the former and 61 percent of the latter were found to be using the pre-emergent herbicides. Survey data showed that 97 percent of the cotton producers interviewed were using no post-emergent herbicide at all.

Two-thirds (66 percent) of the 50 farmers who hilldropped used 16-20 pounds of seed per acre and 30 percent used 21-30 pounds. The highest yield group averaged hilldropping 20 pounds per acre compared to 18 pounds per acre for the lowest yield group.

One-half (50 percent) of the farmers in the highest yield group drilled 31-35 pounds of seed per acre; while only 34 percent in the lowest yield group planted this rate. The average rate for the former was 25 pounds of seed drilled and for the latter was 30 pounds.

Twenty-two percent of the farmers interviewed were using early insect control chemicals. More of the highest producers, about one-third, than the lowest, about one-fifth, used such chemicals.

Forty-seven percent of the farmers interviewed planned to continue the same production practices. Fifty-three percent of the highest yield group as compared to 33 percent for the lowest yield group planned to continue the same production practices. Similar percents of the highest and lowest yield groups (42 and 45, respectively) planned to add one or two new practices the following year.

Findings Related to Factors Influencing Practice Adoption

Seventy-eight percent of the cotton producers interviewed said "income received" was what they liked most about cotton production. Sixty-nine percent of those in the highest yield group listed income as being most important; while 83 percent of the lowest yield group agreed. Other reasons listed by both groups were, "like to watch it grow," "challenge to get high yield," "can be harvested with a machine," "gathering and selling" and "providing a diversion of interest."

Survey data relating what farmers disliked most about cotton production indicated that 26 percent of the highest yield group disliked the small, uncertain margin of profit; while 28 percent of the lowest yield group listed certain land preparation, planting and harvesting problems.

Ninety-eight percent of those interviewed listed the lack of adequate machinery and equipment as the reason why farmers do not adopt recommended cotton management practices. Eighty-seven percent named lack of technical knowledge, 53 percent felt the cost of the practices outweighed the benefits, 31 percent suggested the competition of more rewarding activities and 28 percent didn't believe the practices were sound or that they had tried them and found them to be unsatisfactory.

Eighty-nine percent of the highest yield group and 83 percent of the lowest yield group sought advice from neighbors or friends. Seed, fertilizer and pesticide dealers had counseled with 58 percent of the highest and 83 percent of the lowest yield groups.

Nearly equal percents (58 and 56, respectively) in the highest and lowest yield groups had sought advice from cotton ginners. The same was true for those seeking aid from Extension staff members since 52 percent of the highest and 50 percent of the lowest reported seeking such assistance.

All (100 percent) of the farmers in the highest yield group and 83 percent of those in the lowest yield group used farm magazines as a source of information on cotton production and marketing. Sources such as television, radio, newspaper, university publications, farm meetings, commercial bulletins and field days, in that order, also were popular, larger percentages always being reported by those in the highest yield group than by those in the lowest.

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APPENDIX

TABLE I

RELATIONS OF 1965 COTTON YIELDS PRODUCED TO AVERAGE COTTON PRACTICE DIFFUSION RATINGS AND TOTAL AVERAGE RATINGS

Cotton management practice	All farmers Percent* (N=81)	Yield group (Pounds lint per acre) Considerably above average 925-1250 Percent (N=19)	Above average 790-924 Percent (N=22)	Below average 730-789 Percent (N=22)	Considerably below average 500-729 Percent (N=18)
1. Harvested only dry cotton	4.99	5.00	5.00	4.95	5.00
2. Planted recommended varieties	4.98	5.00	5.00	5.00	4.89
3. Planted between April 20 and May 20	4.98	5.00	5.00	4.95	4.94
4. Used recommended seeding rates and procedures	4.96	5.00	4.91	5.00	4.94
5. Use of insecticide based on actual field count	4.78	5.00	4.59	4.91	4.61
6. Effectively controlled weeds	4.59	4.47	4.91	4.73	4.17
7. Had cotton classified	4.41	4.58	4.45	4.32	4.28

TABLE I (continued)

Cotton management practice	All farmers Percent* (N=81)	Yield group (Pounds lint per acre) Considerably above average 925-1250 Percent (N=19)	Above average 790-924 Percent (N=22)	Below average 730-789 Percent (N=22)	Considerably below average 500-729 Percent (N=18)
8. Getting advice of professionals in production and marketing	4.28	4.47	3.64	4.82	4.22
9. Effectively controlled insects	3.93	3.84	4.09	3.95	3.78
10. Fertilized cotton land based on soil test	3.23	3.42	3.45	3.00	3.06
11. Used recommended material to help control seedling diseases	1.84	1.84	2.05	1.59	1.89
12. Used recommended procedures to help control seedling diseases	1.84	1.84	2.05	1.59	1.89
Total average rating	4.07	4.12	4.09	4.07	3.97

*In the rating scale used: 0 = unaware; 1 = aware of the practice; 2 = interested in the practice; 3 = planning to try the practice; 4 = tried the practice, but not now using it; and 5 = using the practice.

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